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Your ref: LTR-NRC-14-50  
Our ref:  
September 8, 2014

**Subject: Closure of Westinghouse Interim Report Event No. 49781**

Reference:

1. Letter from James A. Gresham to U.S. NRC Document Control Desk, LTR-NRC-14-5, "Interim Report of the Evaluation of a Deviation Pursuant to 10 CFR 21.21(a)(2)," January 29, 2014

Gentlemen:

On January 29, 2014, Westinghouse submitted an Interim Report (Reference 1), pursuant to the requirements of 10 CFR Part 21, regarding the evaluation of an identified deviation which could not be completed in 60 days from the discovery of the deviation. The deviation evaluated by Westinghouse concerns a postulated reactor coolant pump (RCP) locked rotor (LR) transient at an AP1000<sup>®1</sup> design plant.

Specifically, a postulated reactor coolant pump locked rotor transient has been explicitly analyzed for the AP1000 plant steam generator (SG) structural design, as documented in the latest AP1000 Design Control Document (DCD) (Rev. 19). This includes the calculation of LR hydrodynamic forces (HFs) on the SG. This activity was performed based upon the unique features of the AP1000 plant design. However, the other AP1000 plant reactor coolant system (RCS) structural component analyses have not considered the locked rotor transient for hydrodynamic forces. It was previously identified that the effects of these loads could be larger than the limiting design-basis loss of coolant accident (LOCA) hydrodynamic forces (based on the calculated pressure pulsations through the RCS.)

Westinghouse has completed its evaluation and the purpose of this letter is to close Interim Report Event No. 49781. Westinghouse has determined that this issue is not reportable because the identified deviation could not have resulted in a substantial safety hazard were it to remain uncorrected.

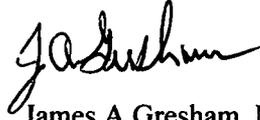
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<sup>1</sup> AP1000 is a trademark or registered trademark of Westinghouse Electric Company LLC, its affiliates and/or its subsidiaries in the United States of America and may be registered in other countries throughout the world. All rights reserved. Unauthorized use is strictly prohibited. Other names may be trademarks of their respective owners.

LEI9  
MRO

If you have any questions regarding this matter, please contact me at (412) 374-4643.

Very truly yours,

A handwritten signature in black ink, appearing to read "James A. Gresham". The signature is written in a cursive style with a large initial "J".

James A Gresham, Manager  
Regulatory Compliance

Attachment

**Interim Report Event No. 49781 (Closeout)**

**SUBJECT:**

Closure of Interim Report Event No. 49781 regarding an evaluation of a deviation pursuant to 10 CFR 21.21 (a)(2)

**TITLE:**

10 CFR Part 21 Interim Report – Reactor Coolant Pump (RCP) Locked Rotor (LR) Transient Evaluation for the AP1000 Plant

**BASIC COMPONENT SUPPLIED BY:**

Westinghouse Electric Company

**BASIC COMPONENT DESCRIPTION:**

The basic components that were delivered are those AP1000 plant reactor coolant system (RCS) components as described in the AP1000 DCD (Rev. 19) not including the AP1000 plant steam generator (SG).

**NATURE OF DEVIATION:**

With the exception of the AP1000 plant SG, AP1000 plant RCS structural component analyses did not consider the LR transient for hydrodynamic forces.

**EVALUATION:**

Westinghouse has completed its evaluation of the postulated RCP LR event with respect to the potential effects on AP1000 plant RCS structural components. The evaluation compared the postulated RCP LR HF's and the limiting LOCA HF's to determine if the LR HF's are less-limiting than the previously evaluated LOCA HF's. The bounding hydrodynamic loads in the primary loop associated with RCS component functionality were also evaluated.

The results of the evaluation demonstrate that column separation and wave propagation effects will not result in bounding hydrodynamic loads in the primary loop, using a calculated minimum RCP LR stoppage time. In addition, the expected LR hydrodynamic loads associated with the minimum RCP LR stoppage time would be significantly bounded by analyzed LOCA loads. Therefore, no further analysis for safety-related RCS components associated with safe shutdown would be required. In summary, the effects from a postulated LR transient will meet applicable design requirements.

**CONCLUSION:**

Based on the above evaluation results, it has been determined that the deviation could not have resulted in a substantial safety hazard were it to remain uncorrected pursuant to the requirements delineated in 10 CFR Part 21.